

### **1. The Air Chamber**

The Court finds that its construction of the term "air chamber" as a "space containing air" is not an engineering impossibility. Had the Court merely defined the air chamber as a "space," this issue could conceivably arise. However, the Court used the word "containing" which clearly contemplates distinct parameters or confines around the air-filled space. Thus, as defined by the Court, the air chamber certainly can be operably connected to the diaphragm, contrary to Electromed's assertions. This element of the claim does not fail for indefiniteness.

### **2. The Continuous Airflow Generator and the Feedback and Control Means.**

As to Electromed's assertions regarding the continuous airflow generator and the first feedback and control means limitation, the Court finds that these components do not fail for indefiniteness. Whether a claim is sufficiently definite involves a determination as to whether the claim, when read in light of the specification, reasonably describes the bounds of the invention to a person ordinarily skilled in the art. *See Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1378 (Fed. Cir. 2000). Thus, the claim need not precisely describe the invention. Here, Electromed has not demonstrated that one skilled in the art would fail to understand the continuous airflow generator or the first feedback and control means when read in light of the specification. These two components of Claim 1 of the '662 Patent do not fail for indefiniteness, and Electromed's motion for summary judgment is denied in that regard.

### **3. Obviousness**

Electromed asserts that the '662 Patent is invalid based upon obviousness. Invalidity based upon obviousness is a question of law that is determined by underlying questions of fact.

*Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 724 (Fed. Cir. 2002). These underlying factual inquiries include: “(1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness.” *Id.* at 725-26 (quoting *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999)). While a patent is invalid if it would have been obvious to a person of ordinary skill in the art, the defendant has the burden to prove obviousness by clear and convincing evidence. *Id.*, citing 35 U.S.C. § 103(a). The defendant may not use hindsight to determine obviousness; rather, the defendant must show “some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in a way that would produce the claimed invention.” *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001).

Here, Electromed asserts that the ‘662 Patent is obvious in light of U.S. Patent No. 2,918,917 (“Emerson”), granted in 1959. Emerson discloses a gas-mask-like apparatus that is used for vibrating portions of a person’s airway. In addition, Emerson discloses a rheostat connected with an electric motor. Undisputedly, the Emerson rheostat can be adjusted to change the current to the motor and thus regulate the speed of the motor. The rheostat is used to provide a user-selected amount of air pressure to the system. Emerson does not identify feedback controllers for its electric motors; nor does it otherwise mention feedback and control. However, Electromed suggests that the use of such feedback controllers with an electric motor, as in the ‘662 Patent, is an obvious component that could be used to control the speed of the motor. Specifically, Electromed asserts that “[t]he motor controller rheostat *could have* feedback circuits.” See Defendant Electromed, Inc.’s Memorandum in Support of Defendant’s Motion for

Summary Judgment at 15 (*emphasis supplied*). In support of this argument, Electromed sets forth the deposition testimony of Nicholas Van Brunt, wherein Mr. Van Brunt stated that a general feedback control for an electric motor is well-known in the art of control systems, and that such a control *could be* purchased off-the-shelf and added to the Emerson motor in lieu of the rheostat. See Aff. of Richard O. Bartz, ¶ 11, Ex. 9.

Without reaching the issue of the application differences between Emerson and the '662 Patent (pulsing through the face mask of Emerson versus through the chest compression apparatus of the '662 Patent), the Court finds as a matter of law that Electromed has not demonstrated by clear and convincing evidence that the '662 Patent is obvious in light of Emerson. Specifically, Electromed has not demonstrated that, without hindsight, Emerson teaches the feedback and control mechanism of the '662 Patent. While the Court recognizes that it construed the feedback and control mechanism of the '662 Patent to act in the same manner as a room thermostat, a rheostat is not a thermostat. Mr. Van Brunt's deposition testimony is not enough to raise a genuine issue of fact as to the obviousness of the use of a feedback and control mechanism in the prior art. His testimony merely raised the possibility that, in hindsight, he could have envisioned the use of an off-the-shelf feedback control system in place of the rheostat. Finally, as noted by ARI, secondary considerations such as the large amount of revenues and the acceptance in the marketplace of the ARI product counsel in favor of nonobviousness.

Based upon these considerations, Electromed's claim of obviousness fails, and its summary judgment motion is denied. Summary judgment on this issue is granted in favor of ARI.

## B. Non-infringement

Literal infringement occurs when every claim limitation is present exactly in the accused product. *Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995).

In order to establish literal infringement, a patentee must prove that the accused device contains each limitation of the asserted claims. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). In the instant case, the parties focus their infringement analysis on Claim 1 of the '662 Patent.

With that in mind, the parties appear to have three central disputes as to the infringement analysis of Claim 1 of the '662 Patent.<sup>3</sup> First, ARI contends that the rod and crankshaft mechanism of the '662 Patent reads on the scotch yoke system of the MedPulse device. Second, ARI contends that the continuous airflow generator of the '662 Patent reads on the airflow generator of the MedPulse device. Finally, ARI asserts that MedPulse device infringes the feedback and control limitations of the '662 Patent. Electromed contends that the MedPulse device lacks these three elements and thus does not infringe.<sup>4</sup>

As to infringement of the rod and crankshaft mechanism of the '662 Patent, a genuine issue of fact exists as to whether the scotch yoke mechanisms of the MedPulse device infringe

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<sup>3</sup> Because the Court has already rejected Electromed's arguments of ambiguity or indefiniteness of the "air chamber," this element is not in dispute. In addition, Electromed concedes that its MedPulse device utilizes a pair of diaphragms. Thus, the only issues remaining in dispute as to the infringement analysis for the '662 Patent are the rod and crankshaft, the continuous airflow generator, and the feedback and control mechanism.

<sup>4</sup> Here, too, Electromed asserts that the '662 Patent is a combination patent in a crowded field, and thus entitled to a narrow interpretation and range of equivalents. As noted in the Court's analysis of this issue as to the '263 Patent, such arguments are misplaced with respect to a literal infringement analysis.

the '662 Patent. According to the claim language of the '662 Patent, the rod is operably connected with the diaphragm on its one end and the crankshaft on its other end. The Court construed the "rod" of the '662 Patent as "any straight link that transmits motion or power from one linkage to another within a mechanism." *Markman* Order at 16-17. With that construction in mind, a jury could determine that significant differences exist between the scotch yoke mechanism and the '662 Patent. For instance, the MedPulse device's scotch yoke's connection to the diaphragm appears to be more of an indirect connection than the operable connection between the rod, crankshaft, and diaphragm of the '662 Patent. The MedPulse device has intervening structures, including a yoke and a slide block, between the eccentric shaft and the diaphragms. Whether that connection still remains an "operable connection" is a question of fact. In addition, a question exists as to whether the rod structure of the '662 Patent encompasses a yoke or scotch yoke. The extent of the differences or similarities among these structures is best left to the jury to decide.

Questions of fact also exist as to whether the MedPulse device infringes the continuous airflow generator and the feedback and control mechanisms of the '662 Patent. The Court construed the "continuous airflow generator" of the '662 Patent as follows:

a mechanism that is used to supply and maintain a user-selected air pressure in the air chamber, thus compensating for leaks in the system and for repeated inhalation and exhalation of the user. Together with the pressure compensation feedback system, the continuous airflow generator provides dynamic adjustments in order to maintain such a user-selected air pressure.

*Markman* Order at 20. The Court construed the feedback and control mechanism in a means-plus-function form, as follows:

the Court construes the overall structure corresponding to the function of maintaining the frequency of the oscillatory air flow generator as a feedback and control system that acts in the same manner as a room thermostat. With a room thermostat, the user selects a room temperature and the heating or cooling system measures the actual temperature, compares the selected temperature to the actual temperature, and then adjusts to maintain that selected temperature. Here, the user defines a setting for the frequency of oscillations, and the frequency-compensation feedback system 38 measures the oscillation rate, compares it to the user-selected oscillation rate, and adjusts to maintain the user-selected oscillation rate. The Court construes the overall structure corresponding to the function of maintaining the user-selected pressure of the continuous air flow generator as a feedback and control system that also acts in the same manner as a room thermostat, as described above. The user defines a setting for the pressure, and the pressure-compensation feedback system 50 measures the pressure, compares it to the user-selected pressure, and adjusts to maintain the user-selected pressure value. This construction includes the functional equivalents of these structures.

*Markman* Order at 23-24. ARI asserts that the diaphragm airflow generator of the MedPulse device is operably connected with the oscillatory airflow generator, and supplies adjustments in order to compensate for the air that vents through the perforated bladder of the MedPulse device, thus compensating for inhalation and exhalation of the user and maintaining a baseline pressure. ARI further alleges that the flapper or check valves in the MedPulse device act as a feedback and control mechanism, defining, comparing, and adjusting the frequency of oscillations and the pressure in the system to user-selected values.

Because the Court previously construed the continuous airflow generator of the '662 Patent to work in conjunction with its feedback and control mechanisms, the Court's determination as to infringement on these issues necessarily depends upon whether the Court determines that the check valves in the MedPulse device function as a feedback and control mechanism, as it was construed by the Court. On that issue, the Court finds that a genuine issue of fact exists. Specifically, a question exists as to whether the check valves act like a sensor

mechanism in the same manner as the '662 Patent, thereby detecting and measuring the precise level of pressure in the system and adjusting to a defined level. Such a sensor seems integral to the notion of a room thermostat and thus to the example which the Court used to define the feedback and control mechanism.

As to the frequency compensation feedback and control mechanism, ARI asserts that the MedPulse uses a form of feedback and control called IR compensation that allows for the motor speed to be held constant despite changes in the load to the motor. Electromed contends, on the other hand, that the MedPulse device does not compensate to allow for a constant motor speed despite load variations, but rather measures and adjusts to an intermediate variable which "more or less correlates to a desired output." See Electromed's Memorandum in Opposition to Advanced Respiratory's Motion for Summary Judgment at 25. In light of this dispute, the Court finds that a question of fact exists as to whether the MedPulse device has a feedback and control mechanism operably connected with the oscillatory airflow generator, corresponding to the compensation feedback system 38 in the '662 Patent. Summary judgment on this issue is inappropriate.

Despite Electromed's claims that the '749 Patent granted to Craig Hansen and assigned to Electromed amounts to an "administrative determination that the '749 device does not literally infringe the . . . '662 Patent[]." the '749 Patent is not dispositive of the issue of infringement. See *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569 (Fed. Cir. 1984). Considering the various issues of material fact that the Court has found to exist as to the infringement of the '662 Patent, the question of whether or not the '749 Patent acts as an improvement or a complete departure from such prior art remains, too, for the jury to decide.

In summary, the Court finds that the determinations of whether the MedPulse device infringes these three elements of Claim 1 of the '662 Patent are questions of fact for the jury. After a careful review of the '662 Patent and the MedPulse device, it appears to the Court that the MedPulse device does indeed appear to be quite similar to the '662 Patent. However, a jury is the appropriate forum in which to determine the substantiality of the specific differences between the '662 Patent and the MedPulse device. Thus, both ARI's and Electromed's motions for summary judgment are denied as to the infringement and non-infringement issues.

**4. False Advertising Counterclaims**

ARI asserts that summary judgment is appropriate on Counts III and IV of Electromed's Answer and Counterclaims, wherein Electromed has asserted false advertising under the Lanham Act, 15 U.S.C. § 1125, and under the Minnesota Deceptive Trade Practices Act, Minn. Stat. § 325D.43-48. Because Electromed has not opposed ARI's motion in this regard, no genuine issue of material fact exists. Thus, ARI's motion for summary judgment is properly granted on this issue.

For the reasons stated, **IT IS HEREBY ORDERED:**

1. Plaintiff's Motion for Summary Judgment (Doc. No. 100) is **DENIED IN PART** and **GRANTED IN PART**, as follows:

a. Plaintiff's Motion for Summary Judgment on the issue of validity of the '263 Patent is **GRANTED**;

b. Plaintiff's Motion for Summary Judgment on the issue of infringement of the '263 Patent is **DENIED**;